Research Department
Federal Reserve
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San Francisco

January 20, 1984

FRBSF Weekly Letter

Misaligned Dollar

If recent trends continue, the dollar could soon fly as high as Skylab, but it may not come back down to earth as quickly. Since 1980, the dollar has risen, almost without interruption, to its highest level in over a decade. The dollar's average foreign currency value is now 26 percent higher than in 1980, and nearly 5 percent higher than at the beginning of this year (see Chart 1).

The dollar's rise is all the more remarkable in that it seems to have defied economic forces conventional wisdom says should have pulled it down. Normally, higher inflation in the U.S. than abroad would be expected to result in a falling dollar. Yet the dollar has risen dramatically over the last three years against the currencies of West Germany, Japan, and Switzerland – all of whom have had, on average, lower inflation than our own. As a result, the real, or inflation-adjusted, value of the dollar is at an unprecedented level. This has made U.S. goods more expensive in relation to foreign goods than they have been in many years. Conventional wisdom would also say that a high and rising U.S. current account deficit should push the dollar down. But the dollar has continued its ascent during the last eighteen months, despite a precipitous decline in our current account – which reached a record deficit of nearly $40 billion in 1983.

The dollar's apparent defiance of "economic gravity" has led many observers to wonder whether there is something seriously amiss in the foreign exchange markets. They have speculated that a fall in the dollar is inevitable, perhaps even imminent. Concerns that the dollar is "misaligned" and undermining the competitiveness of U.S. products in world markets have prompted calls for massive intervention in the foreign exchange markets, and other measures, to bring the dollar back down.

This *Letter* explains that, as unusual as the dollar's behavior has been over the last several years, there is nothing economically "irrational" about it. Nor, unfortunately, is a high dollar necessarily unsustainable.

Real interest rates

The main key to the dollar's rise lies in the equally unprecedented behavior of U.S. real interest rates in recent years. The real interest rate is simply the nominal interest rate earned on an investment less the inflation expected to occur over the investment's life. That is, the real interest rate measures the gain in purchasing power from an investment.

Increases in U.S. real interest rates (relative to those abroad) have made dollar investments more attractive than investments in other currencies. Capital flows attracted to our shores have pushed the dollar up on the foreign exchanges. This process, however, is self-limiting mainly because real interest increases are the temporary result of excess demands in credit markets and so have no permanent effect on the dollar's value. Thus, as the dollar's current value rises with the increase in our real interest rates, the amount by which it is expected to depreciate in the future goes up by the same amount. The dollar stops rising when its expected future depreciation just compensates for the higher real interest earned on dollar investments.

On this basis, an increase of one percentage point in the one-year U.S. real interest rate relative to rates abroad can be expected to raise the dollar by one percent above its long-run value, everything else being equal. However, the same increase in the (annualized) real interest rate on a ten-year U.S. security could raise the dollar by almost ten times this amount – ten percent – because a one percent increase in the yield on a ten-year investment represents ten

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times as much additional interest earned as the same increase on a one-year investment. Thus, modest increases in longer-term real interest rates can have considerably more-than-proportionate impacts on the dollar's current value.

There can be little doubt that short-term and long-term U.S. real interest rates are now considerably higher than they were in 1980. Nominal Treasury bond rates, for example, are now at about their average level during that year despite a U.S. inflation rate that is only one-half that of three years ago (Chart 2). Given this record, and Administration and Federal Reserve commitments to contain inflation in the future, it is not unreasonable to suppose that inflation anticipated over the next several years has also fallen substantially. Indeed, the survey taken by Walter Hoey, vice president and chief economist of Warburg Paribus/A.G. Becker, indicates that inflation expected over the next five years has dropped nearly three percentage points since 1980. Thus, real medium and long-term U.S. interest rates very likely have risen substantially since that year. By contrast, foreign nations' long-term nominal interest rates have generally fallen or remained constant in relation to their inflation over the last several years. This suggests that U.S. real interest rates have risen substantially in comparison to those abroad as well. Such increases could account for most of the dollar's strength, given the substantial "leverage" on exchange rates exerted by longer-term interest rates.

High and rising U.S. real interest rates also explain the dollar's continued rise even as our current account has fallen deeply into deficit. As our interest rates have pulled the dollar up, the prices of U.S. goods traded on world markets have risen dramatically in relation to those of our foreign competitors. U.S. exporters therefore have encountered increasing difficulty in selling abroad, and U.S. producers at home have found it more difficult to compete with foreign imports. As a result, our imports have grown considerably faster than our exports, causing our current account balance to deteriorate dramatically.

High U.S. real interest rates, then, appear to be the main cause of the high dollar *and* our increasing external deficit. But this answer to the dollar puzzle only raises another question – why have U.S. real interest rates risen so much?

Monetary policy

Part of the answer lies with the change in U.S. monetary policy beginning in 1979. At that time, the Federal Reserve began a program of reducing money growth to lower our inflation – then in the double-digit range.

Normally, slower money growth takes several years to bring inflation down, mainly because wages and prices are constrained by contracts and other institutional impediments from responding immediately. Decelerating money growth results at first in a decline in real liquidity, as individuals and businesses find their cash holdings growing more slowly than their expenditures. This decline in real liquidity pushes up real interest rates. Real interest rates are apt to continue to rise as long as real liquidity is declining, that is, until the rate of inflation falls *below* the rate of money growth. At that point, real liquidity begins to rise again, reducing pressures in credit markets and allowing real interest rates to fall back toward more normal levels.

The decline in U.S. inflation and money growth since 1979 provides a vivid illustration of *the first half* of this process. During the 1980-81 period, inflation measured by the GNP deflator averaged 9.3 percent, nearly 3 percentage points greater than the growth of M1 over the same interval. The result was a substantial decline in real money balances and hence in real liquidity. Not surprisingly, short-term real interest rates rose dramatically during this period;

Chart 1
Trade-Weighted Value of Dollar

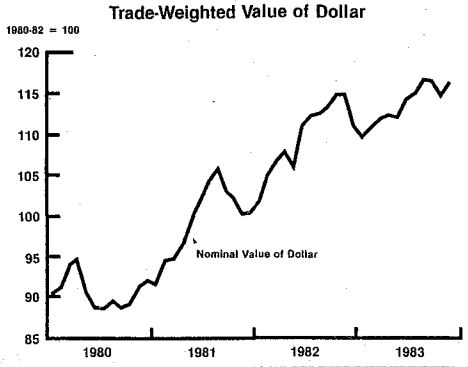
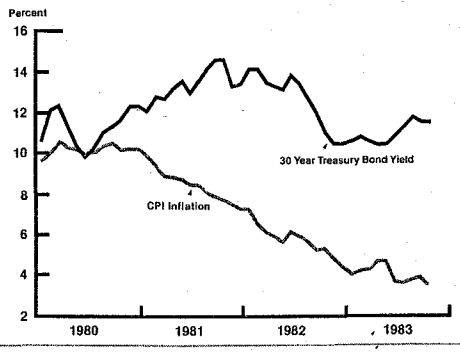


Chart 2
30 Year Bonds and Inflation



nor was it surprising, given the protracted nature of the decline in liquidity, that real long-term interest rates also rose. These interest rate increases – particularly the rise in longer-term real interest rates – were mainly responsible for the dollar's remarkable ascent during this period, and for the deterioration in our current account.

The U.S. experience during this period was not unique. Beginning in early 1979, the Thatcher government in Great Britain also began an anti-inflationary drive. Money growth (M1) slowed sharply and interest rates rose even as inflation declined. This increase in British real interest rates was a major factor contributing to the nearly twenty percent rise in the value of the pound versus the dollar between 1979 and 1980, although rising British oil exports during this period were a factor as well.

Enter – Budget Deficits

The U.S. and British experiences strongly suggest that the dollar's rise between 1979 and 1981 was a natural result of the temporary rise in real interest rates that protracted slowdowns of money growth normally bring. However, that same process should have allowed our real interest rates to begin falling in 1982, when inflation fell to nearly two percentage points below money growth so that real liquidity began to increase. Thus, the dollar might have been expected to have fallen since then.

In fact, the dollar has continued to rise since 1982. And again, the cause seems to lie with our interest rates. Real short-term interest rates are now nearly as high as their average during 1981. Given the dramatic decline in our inflation over the last two years, long-term interest rates here would appear to be at least as high – perhaps higher – in real terms that they were in 1981. Why then did real interest rates not fall as real liquidity started rising in 1982?

U.S. fiscal policy would seem to provide the answer to this last question – and the key to what will happen to the dollar in the future. U.S. government budget deficits have soared over the last several years, rising from $17 billion in 1979 to an estimated $195 billion dollars in 1983. Given current policies, the deficits could well remain near $200 billion for many years to come. The unprecedented level of government borrowing these deficits have entailed probably has added greatly to pressures on our real interest rates, keeping them high even as the pressures from tighter monetary policy were abating.

In short, the dollar's initial rise in the several years after 1979 can be attributed to "tight" monetary policy. But because inflation has now declined, the dollar's continued strength since 1982 can be attributed to "loose" fiscal policy. Fiscal policy, therefore, now bears the primary responsibility for the *continued* deterioration of our trade and current accounts.

When will the dollar come down? When our real interest rates fall, but when will that happen? Alas, unless steps are soon taken to reduce future budget deficits substantially, there can be little hope for any dramatic fall in U.S. real interest rates, and hence for the dollar, over the coming year. Even worse, if huge budget deficits persist over the remainder of this decade, as may be the case without major policy changes, the dollar can be expected to remain high by historical standards – although probably not as high as now – and the current account to remain very deeply in deficit.

Charles Pigott and Michael Hutchison

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 12/28/83	Change from 12/21/83	Change from year ago Dollar	Change from year ago Percent
Loans (gross, adjusted) and investments*	165,522	186	1,228	0.7
Loans (gross, adjusted) — total#	145,328	167	2,183	1.5
Commercial and industrial	44,261	294	− 1,556	− 3.4
Real estate	57,801	58	713	1.2
Loans to individuals	25,967	252	1,958	8.2
Securities loans	3,470	116	643	22.7
U.S. Treasury securities*	7,821	− 26	814	11.6
Other securities*	12,371	45	− 1,768	− 12.5
Demand deposits — total#	45,098	1,679	1,959	4.5
Demand deposits — adjusted	30,355	301	629	2.1
Savings deposits — total†	65,937	− 91	21,444	48.2
Time deposits — total#	70,404	− 78	− 18,219	− 20.6
Individuals, part. & corp.	64,321	− 118	− 14,352	− 18.2
(Large negotiable CD's)	17,319	− 170	− 13,184	− 43.2

Weekly Averages of Daily Figures	Week ended 12/28/83	Week ended 12/21/83	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (−)	61	129	116
Borrowings	42	35	9
Net free reserves (+)/Net borrowed(−)	20	94	107

* Excludes trading account securities.

Includes items not shown separately.

† Includes Money Market Deposit Accounts, Super-NOW accounts, and NOW accounts.

Editorial comments may be addressed to the editor (Gregory Tong) or to the author . . . . Free copies of this and other Federal Reserve publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 974-2246.